

# Knowledge of and Attitudes Toward Wilderness in the Southern Appalachian Ecoregion

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**Abstract**—Using two measures of knowledge of wilderness management practices, the general public does not appear to be very knowledgeable about activities allowed in federally designated wilderness areas. This lack of knowledge was found across all of the basic socio-demographic groups. Although two out of three people support setting aside more public lands as wilderness, only a small percent (14%) express strong support. People with a high school education or less, those employed in a natural resource-related job, rural residents and minorities were less supportive than their respective counterparts.

The southern Appalachian ecoregion (SAE) consists of the Appalachian Mountains and Shenandoah Valley, extending southward from the Potomac River on the northern boundaries of Virginia and West Virginia to northern Georgia and the northeastern corner of Alabama. This area includes 135 counties and 37 million acres. It is the source of much of the drinking water for the southeastern region of the United States and is the headwaters of nine major rivers. Southern Appalachia is also home to eight national forests, the Great Smoky Mountains and Shenandoah National Parks, the Blue Ridge Parkway and the Appalachian Trail. Together, these areas form the largest contiguous block of public lands east of the Mississippi River (Cordell and others, 1996). There are 49 federally designated wilderness areas in the southern Appalachian ecoregion, totaling approximately 476,654 acres. The total wilderness acreage in the SAE is about half the size of the Bob Marshall Wilderness. Virginia has the largest number of wilderness areas in the SAE (16) with a total of 166,641 acres, followed by Tennessee with 10 (61,853 acres), Georgia with 8 (86,589 acres), North Carolina with 8 (70,615 acres), West Virginia with 6 (80,852 acres), Alabama with 1 (7,245 acres) and South Carolina with 1 (2,859 acres).

The region has been going through a fairly rapid transformation over the past few decades as its residents try to preserve the region's unique cultural and environmental

heritage in the face of strong socioeconomic, demographic and technological forces impacting the region. More than two million people left the region between 1950 and 1970 because of hard times caused by a loss of jobs to rapid mechanization of the coal mining industry, sharp declines in agriculture and manufacturing and a major shift from rail to highway transportation. The majority of the outmigrants were young, white males with above-average education. Most left the region to seek better job opportunities in Ohio, Michigan and Illinois (Cordell and others, 1996; Helton and Allen, 1996; Isserman, 1997; United States Department of Agriculture, 1986).

The region still has few metropolitan areas and remains relatively rural in nature but many conditions have significantly improved since the 1970s. The population is growing fairly rapidly, much of it attributable to the arrival of recent immigrants attracted to the region's rural mystique, rich history, expanding and diverse economy and range of environmental amenities and outdoor recreation opportunities. Many have sought refuge in the small towns, gateway communities and rural areas surrounding the region's national parks, lakes and forests. Although only 10 percent of those living in the SAE today make their livelihoods directly from the land, about one-half of the residents still live in rural areas, and many maintain active outdoor lifestyles (Cordell and others, 1996; Helton and Allen, 1996; Isserman, 1997; United States Department of Agriculture, 1986).

As this region grows, we are seeing increased fragmentation of private lands and forests and greater recreation demand on national forests and parks. The purpose of this paper is to assess public knowledge of wilderness practices and current sentiment toward the need to designate more wilderness areas. The following research questions are addressed: 1) What is the level of knowledge of selected wilderness management practices in the southern Appalachian ecoregion? 2) How does this knowledge vary by socio-demographic characteristics? 3) What are the attitudes toward setting aside more public land as wilderness? 4) How do these attitudes vary by socio-demographic characteristics?

## Methods

Telephone interviews were conducted by the Human Dimensions Research Lab in the Department of Forestry, Wildlife and Fisheries at the University of Tennessee from August 10 to September 21, 1995. Survey participants were selected through random-digit dialing using telephone numbers purchased from Survey Sampling Inc. of Fairfield, Connecticut. Using a stratified sample design, 135 counties

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were selected from seven states (Virginia, West Virginia, North Carolina, South Carolina, Tennessee, Georgia and Alabama). These counties conform to the boundaries of the Southern Appalachian International Biosphere Reserve and have unique characteristics based on biogeographic and ecological conditions. The counties were divided into four geographic subregions (Northern Ridge and Valley, Blue Ridge, Southern Ridge and Valley, Southern Mountain-Piedmont) that run primarily north and south along the Appalachian Mountains (Cordell and others, 1996). Each section was divided into rural and urban segments using rural-urban codes for metro and nonmetro counties developed by Butler and Bealer (1994), resulting in eight strata. A sample quota of 150 participants per strata (a total of 1,200) was used to ensure an equal sample size for rural and urban residents and to represent the geographic distribution of residents across the ecoregion.

A total of 2,829 households were contacted, with a raw response rate (including 1,239 completes and 50 partial completes) of 46 percent and a final response rate (completes only) of 44 percent. Final sample size was 1,239 with a margin of error of +/- 3 percent. The sample had slightly more females and were better educated than the general population.

## Questionnaire Content and Measures

The questionnaire was part of a comprehensive biophysical and social assessment of the southern Appalachian ecoregion. It included questions designed to gauge cognitive and behavioral indicators of environmentalism and to identify the socio-demographic characteristics of households and survey respondents.

### Knowledge of Wilderness Management Practices—

An environmental knowledge index composed of true/false items was developed in cooperation with representatives of state and federal resource management agencies in southern Appalachia. Items included general questions about wildlife, endangered species, forests and water pollution, as well as more specific questions on these issues framed within a regional context. Questions ranged from difficult to easy. There were two questions that pertained specifically to

wilderness: 1) timber harvesting is permitted in federally designated wilderness areas in southern Appalachia (false) and 2) motor vehicles are permitted in federally designated wilderness areas in southern Appalachia (false). For summary analysis, answers were considered incorrect if respondents answered incorrectly or indicated that they "did not know" the answer.

**Attitudes Toward Setting Aside More Public Land as Wilderness—**An environmental attitudes index that addressed issues in southern Appalachia was also developed in cooperation with resource management agencies in the region (Cordell and others, 1996). The index covered items such as timber harvesting, fire management, endangered species, air and water quality and wilderness. Each participant was presented with a statement about an issue and asked to respond using the following five-point Likert scale: strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree. The one item concerning wilderness was, "More public lands should be set aside as wilderness."

## Design of Analysis

Chi square tests were used to determine levels of statistical significance.

## Findings

### Knowledge of Wilderness Management Practices

Responses to the two questions concerning wilderness management practices suggest that the public has a limited knowledge of wilderness management practices in federally designated wilderness areas. Less than 20% of the survey participants indicated correctly that timber harvesting (17.6%) and motor vehicles (17.3%) are not permitted in wilderness areas (table 1). Using combined scores, less than 10 percent (6.7%) answered both questions correctly (table 1). Knowledge of wilderness management practices also varied little across different socio-demographic groups. Regardless of income, education, gender, ethnic origin, rural/urban

Table 1—Knowledge of wilderness management practices in the Southern Appalachian Ecoregion.

Wilderness management questions	Answered incorrectly	Don't know	Answered correctly
Timber harvesting is permitted in federally designated wilderness areas	50.8%	31.6%	17.6%
Motor vehicles are permitted in federally designated wilderness areas	59.7%	23.0%	17.3%
	None correct*	One correct	Both correct
Combined answers	71.8%	21.5%	6.7%

\* Includes "Don't Know."

n = 1220

residence, whether or not they were employed in a natural resource related job or indicated they were conservative or liberal, less than 10 percent responded correctly to both questions concerning wilderness management practices (table 2). The one socio-demographic group that had a statistically significant difference was gender, although the actual difference was only five percent. Males were more likely to answer both items correctly (9.8%) than females (4.7%). The percent with neither item correct ranged from 63.4% (non-Caucasian) to 78.4% (incomes greater than \$75,000).

## Attitudes Toward Setting Aside More Public Land as Wilderness

When asked if more public lands should be set aside as wilderness, a considerable majority of the survey participants agreed (68.6%), while approximately one in four (24.3%) did not believe that more public land should be designated as wilderness (table 3). A small percentage (7.1%) did not have an opinion either way. When examined more closely,

**Table 2** Knowledge of wilderness management practices by socio-demographic characteristics.

Socio-demographic characteristics	None correct	One correct	Both correct	Statistical significance
<b>Income</b>				
<\$15,000	77.8%	16.1%	6.1%	—
\$1544,999	67.7%	24.3%	8.0%	
\$45-74,999	72.2%	22.2%	5.6%	
>\$75,000	78.4%	14.8%	6.8%	
n = 1092				
<b>Education</b>				
≥High school grad	72.6%	20.0%	7.5%	—
Some college	69.6%	24.4%	6.0%	
College/post grad	73.4%	20.4%	6.3%	
n = 1215				
<b>Gender</b>				
Female	73.7%	21.5%	4.7%	p<.01
Male	69.0%	21.5%	9.8%	
n = 1216				
<b>Ethnic origin</b>				
Non-Caucasian	63.4%	29.5%	7.1%	—
Caucasian	72.7%	20.7%	6.7%	
n = 1220				
<b>Place of residence</b>				
Rural	69.5%	23.2%	7.4%	—
Urban	74.1%	19.8%	6.1%	
n = 1220				
<b>Natural resource related job</b>				
No	71.8%	21.9%	6.3%	—
Yes	70.5	20.2	9.3%	
n = 813				
<b>Political ideology</b>				
Conservative	71.7%	21.3%	7.1%	—
Liberal	70.6%	23.0%	6.4%	
n = 1016				

**Table 3**—Attitudes toward setting aside more public land as wilderness.

More public land should be set aside as wilderness			
Strongly disagree	1.3%	Disagree	24.3%
Disagree	23.1%	Neither	7.1%
Neither agree nor disagree	7.1%	Agree	68.6%
Agree	54.6%		
Strongly agree	14.0%		
n = 1183			

however, the number of people with strong opinions was fairly limited. Only 14% strongly agreed that more wilderness areas were needed, but few strongly disagreed (1.2%) (table 3).

Unlike wilderness knowledge, this category showed a number of significant differences across socio-demographic groups. People with some college education, Caucasians, urban residents and those whose job was not related to natural resources were more likely to support setting aside more public land as wilderness than their counterparts (table 4). Among these socio-demographic variables, however, support only ranged from a relative low of 64.6% (non-Caucasian) to a high of 78.2% (income greater than \$75,000). No statistically significant differences in levels of income, gender or political ideology (conservative/liberal) were found.

## Summary

According to these limited measures of knowledge of wilderness management practices, the general public in the SAE region does not appear to be very knowledgeable about activities that are permitted in federally designated wilderness areas in that region. Although females were slightly less likely to have answered the two items correctly, this lack of knowledge existed across all of the basic socio-demographic groups including place of residence, natural resource employment and political ideology.

Although two out of three people support setting aside more public lands as wilderness, the degree of support appears to be only moderate. Only a relatively small percentage of the public (14%) "strongly" believe that more public land should be designated as wilderness. Certain socio-demographic subgroups were less likely to support wilderness designations: people with a high school education or less, those who have a natural resource-related job, people who live in rural areas and minorities. Support did not vary by income, gender or political ideology.

## Conclusions

What does the general public know about wilderness management practices? What is their attitude toward designating more public land as wilderness? What would we like for the public to know about wilderness? These results suggest that knowledge of what constitutes a wilderness area, in terms of what is allowed, is quite limited. What should the public know about the wilderness preservation system? In terms of a broad-based wilderness education

Table 4—Attitudes toward setting aside more public land as wilderness by socio-demographic characteristics.

Socio-demographic characteristics	Agree	Disagree	Statistical significance
<b>Income</b>			
<\$15,000	70.1%	29.9%	
\$15-44,999	74.8%	25.2%	
\$45-74,999	74.8%	25.2%	
>\$75,000	78.2%	21.8%	
n = 977			
<b>Education</b>			
≥High school grad	68.8%	31.2%	p<.01
Some college	77.8%	22.2%	
College/post grad	77.8%	22.2%	
n = 1094			
<b>Gender</b>			
Female	73.5%	26.5%	
Male	74.2%	25.8%	
n = 1095			
<b>Ethnic origin</b>			
Non-Caucasian	64.6%	35.4%	PC.05
Caucasian	74.8%	25.2%	
n = 1099			
<b>Place of residence</b>			
Rural	69.8%	30.2%	p<.01
Urban	78.0%	22.0%	
n = 1099			
<b>Natural resource related job</b>			
No	77.1%	22.9%	PC.05
Yes	68.3%	31.7%	
n = 742			
<b>Political ideology</b>			
Conservative	71.6%	28.4%	
Liberal	76.5%	23.5%	
n = 919			

program, what should be the content of the program? Once that is determined, how do we educate or connect with the public? And ultimately, do we need to? Are there other ways to achieve the goals of wilderness?

There is general public support for wilderness in the southern Appalachian ecoregion. It is a positive concept in the public's mind, but the results from this study suggest that most people do not have strong feelings in favor of designating more wilderness areas. Therefore, people are not likely to engage in wilderness activism and related political processes.

In future research, we need to better understand what the general public is supporting. What is the picture they have in their mind when they think about wilderness? Currently, many seem to believe that timber harvesting and motor vehicles are allowed in wilderness areas. What does constitute a wilderness to this vast majority of the population in the southern Appalachian ecoregion? Would increased levels of knowledge about wilderness, alter support for setting aside more public lands as wilderness?

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